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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,861	11/05/2001	Michael Persson	ANO 6129 PIUS/3159	6497

7590 02/27/2006  
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EXAMINER

METZMAIER, DANIEL S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 02/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/007,861

Applicant(s)

PERSSON ET AL.

Examiner

Daniel S. Metzmaier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 26-65 is/are pending in the application.
- 4a) Of the above claim(s) 36-42, 54-60, 64 and 65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 26-35, 43-53 and 61-63 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 1 and 26-65 are pending.

#### ***Election/Restrictions***

1. This application contains claims 36-42, 54-60, and 64-65 drawn to an invention nonelected with traverse in Paper filed October 6, 2003.
2. This application contains claims 36-42, 54-60, and 64-65 drawn to an invention nonelected with traverse in Paper filed October 6, 2003. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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5. Claims 1, 26-35, 43-53 and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johansson et al, US 5,447,604<sup>1</sup>, optionally in view of Brekau et al, US 5,458,812, Vossos, US 3,714,064, Chilton, US 3,560,400, and Mindick, 3,502,593. See column 2, line 3 to column 3, line 12, and examples. Johansson et al '604 discloses the claimed process, where Johansson et al '604 (column 2, lines 56-57) teaches "The obtained sol will hereby normally get a pH value above 10.5. This is a clear disclosure of the formation of sols alkalized to applicants' alkalizing step of a pH of at least 10. The alkalizing step, particle growth and the alkalizing step of the obtained sol read on the same alkalizing step since the claim fails to define, what "the obtained sol" in the alkalizing step (d) refers or how the alkalizing steps differ. Said second alkalizing step reads on alkalizing the alkalized sol immediately upon reaching a pH of at least 7. The particle growth would have begun upon initiation of the alkalization step. Johansson et al '604 (column 3, lines 3-9) discloses particle growth occurs after alkalization for about a week and the sols are stable for months. A week of growth reads on at least 10 minutes claimed.

Furthermore, the amended claims read on pouring or pumping the alkalizing agent into the acid sol since the act of pouring results in a progression to a pH of at least 7 necessarily followed by a pH of greater than 10.0 by the continued addition. The steps are different based on the pH achieved. The claim amendment sets forth a first alkalizing step to form an alkalized sol to a pH of at least 7. The second alkalizing step of the obtained sol to a pH of at least 10.0. Applicants' claims do not define "the

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<sup>1</sup> Patent Family member to WO 91/7351.

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obtained sol". Particle growth would have been expected to occur upon the initial addition of the alkalizing agent in the first alkalizing step.

Example 1 discloses the use of a higher concentration sodium silicate than the acid sol formed in step (a). The addition of the sodium silicate to the acid sol reads on concentrating. The addition of sodium silicate after the pH is anywhere above 7 reads on concentrating the alkalized sol obtained according to step (b).

To the extent the Johansson et al '604 reference differs from claims 26-28, 44-46 and 61-63 in the concentrating the silica sols during or following the processing steps, Brekau et al, Vossos, Chilton, and Mindick disclose making silica sols and concentrating said sols by various methods for the advantages of reducing storage and shipping cost.

Furthermore, Vossos (columns 1 and 2, see also column 2, lines 61-62) teaches stable sols with a pH of 9 to 11 and surface areas in excess of 600 m<sup>2</sup>/g. Chilton (column 3, lines 8-10) teaches the sols are have a silica soda ratio before or after concentration to correspond to a pH of 9-11. Brekau et al (column 4) teaches varying pH ranges up to 12, 11 and 10.5.

These references are combinable because they teach methods of making silica sols from acidic silicic acid and sodium silicate or metal hydroxide by particle growth. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to employ a concentrating step after the alkalizing step in the Johansson et al '414 reference for the advantages of reducing storage and shipping cost.

Furthermore, It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to further alkalize the sols for stabilization within the art known pH ranges shown in the art.

***Response to Arguments***

6. Applicant's arguments filed Dec 1, 2005 have been fully considered but they are not persuasive.

7. Applicants (page 4) assert the Johansson et al '604 reference lacks a two alkalizing steps with a step of particle growth in between or a heat-treating step there between. This has not been deemed persuasive since the pH progresses from 1 to 4 in the Johansson '604 reference to greater than 7 followed to greater than 10.0, said claims read on mere pouring or pumping the alkalizing agent into the acid sol resulting first in a pH of at least 7 followed by a pH of at least 10.0. It would be impossible to modify the pH instantaneously. Stepwise addition of the known step of alkalizing is within the ordinary level of one having ordinary skill in the art at the time of the invention.

It is further noted that at a pH of 5-7, particle growth occurs and would be expected during the alkalizing step.

It is noted; claims are given their broadest reasonable interpretation during prosecution.

Applicants' claims require a particle growth of the alkalized sols or heating of the alkalized sol. While claim 1 set forth particle growth for 10 minutes followed by a further alkalizing step, allowing a system to achieve equilibrium is common practice aqueous

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chemistry. The stepwise addition of the alkaline agent is well within the level of one having ordinary skill in the art to achieve said equilibrium. Applicants provide no comparative data regarding the stepwise addition. Attention is further directed to Brekau et al, which is concerned with steady state conditions and process temperatures above 30/35° C.

While claim 43 requires heat-treating the alkalized sol to a temperature of at least 30/35° C, applicants do not quantify the degree of the first alkalizing step nor the time for said heat treatment. Vossos and Brekau et al both teach process temperatures above 30/35° C. It is generally well known that heat generally increase reaction rate. Control of the temperature or heating would have been within the ordinary level of skill in the art. Applicants have not provided any showing of unexpected results by providing the heating step for the scope of the claims.

8. Applicants (page 4) further assert the particle growth and heating must occur between the two alkalizing steps. All the claims employ the transitional language “comprising” and therefore do not exclude the continued function of the steps as claimed or further steps in the process, i.e., particle growth begins upon the initiation of the first alkalizing step. Particle growth is typically most rapid at pH values near neutrality and slightly acidic (5-8) and continues until system equilibrium is achieved. The claim requires “allowing the particle growth of the alkalized sol for at least 10 minutes alkalizing the obtained sol. Said time limitation for said growth is dependent on the equilibrium of the system since growth occurs in the system as disclosed in Johansson et al.

9. Applicants (pages 4 and 5) assert the claims require sequential steps and the references fail to disclose or suggest the sequential steps and a particle growth step or heating step between the alkalizing steps. This has been addressed above and Applicants have not set forth evidence that merely allowing the process system to equilibrate as would have produced unexpected results or would have been an unexpected modification for the claimed subject matter.

10. Furthermore, the time period for the alkalization step and the ability for a system to equilibrate are clearly dependent on the apparatus employed (i.e., the vessel volumes, pump rates, mixing devices, etc.).

#### ***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**Daniel S. Metzmaier**  
**Primary Examiner**  
**Art Unit 1712**

DSM